



# FUTURE SCOPE AND STRATEGIES TO CONSERVE AND PROPAGATE AYURVEDA HEALTHCARE : A FUTURITISTIC REVIEW

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## ABSTRACT

Ayurveda, one of the oldest systems of healthcare, continues to gain prominence worldwide due to its holistic approach to health, disease prevention, and wellness. Despite its rich historical legacy, the modern era presents both challenges and opportunities for its conservation and propagation. This review explores the future scope of Ayurveda, focusing on the integration of ancient wisdom with contemporary scientific advancements. Key strategies for the preservation and dissemination of Ayurvedic knowledge include the standardization of practices, validation through clinical research, digitalization of traditional texts, and collaboration with modern healthcare systems. Additionally, efforts to address the gaps in education, training, and regulatory frameworks are crucial for enhancing the credibility and global acceptance of Ayurveda. The article also examines the role of technology, such as artificial intelligence and biotechnology, in supporting personalized Ayurvedic therapies. Finally, a vision for Ayurveda's role in global healthcare, emphasizing sustainability, preventive care, and individualized treatments, is discussed. The future of Ayurveda lies in its ability to adapt to modern healthcare needs while preserving its traditional principles, ensuring its continued relevance and impact on global health.

**KEYWORDS:** Ayurveda, Artificial Inteligents, Informstion Technology Goble Health

## INTRODUCTION

The classical Indian system of medicine called Ayurveda is one of the ancient science that has exerted its persuade since ancient times till today. The roots of this traditional science date back to the Vedas and have developed through the ages. Ayurveda is not merely a medical science, but it is the science of life that aims to grant man a life of hundred years full of health and happiness. Ayurveda talks of both body and mind and considers diseases as a psychosomatic phenomenon. The medical treatment of Ayurveda has proved to be effective and has therefore been acknowledged all over the world in recent decades as alternative medicine, complementary to the modern era. It is originated in India so, interwoven in the socio-cultural fabric of the country. Every household of India in some form or another uses Ayurveda. But today's era is an era of validation, we must validate our potential on every aspect of our life, and Ayurveda which was conceptualized thousands of years back needs revalidation in the modern era also.

Teaching, training and patient care is the main component of Ayurveda. The working pattern to propagate Ayurveda in the public domain is Gurukul as a school in ancient. The process of giving out of the subject is just like a 'mouth to mouth'. This type of Knowledge regarding Ayurveda propagation method is sufficient at that time. Method of teaching training and patient cares gradually changes with the era of literature is started. Modern medical science growing day by day and develop their unique methodology of learning science. Modern medical science develop such scientific tools and methods to uniform the science with the help of ICD(International classification

of diseases)<sup>1</sup>, SNOMED CT (Systematized Nomenclature of Medicine Clinical Terms)<sup>2</sup>, EHR<sup>3</sup> is very helpful for collection of health records, storage, analysis, maintenance, privacy, security with easy accessible.

After a gap of about thousands of years, it is now essential to revive the ancient traditional knowledge which share many aspects of philosophical ground and approach so that can benefit to all sciences. For that should come to encounter the new challenges and interact with modern medical system which although has an extroverted approach based on the materialistic hypothesis and culture it embraces and ignores the entire non-material inner world which constitutes the major part of the man's being has made amazing contribution to human civilization with its meticulous research and their findings. Through a healthful interaction of both of the ancient system with the modern medical system, mankind can certainly be benefited. Scholars of the traditional and the modern system must make an effort for such a joint venture.

## Practical guidelines for implementing the concept of health in today's society

There are many colleges, universities, and institutions in the present time that serve to propagate Ayurveda, but the method of propagation publically is different and there is no uniformity to publicize the knowledge. However there are perceptible steps taken by AYUSH (Ayurveda Yoga Unani Siddha & Homeopathy), CCIM (Central Council of Indian Medicine), CCRAS( Central Council for Research in Ayurveda Sciences). A lot of work has been done to get this knowledge on global

platform. The credit goes to the Department of AYUSH for its successful development strategies by organizing various programs to popularize Ayurveda abroad. The Department of AYUSH sponsors expert Ayurvedic faculties to go to foreign lands and conduct introductory training programs for the betterment of Ayurveda. Right now AYUSH ministry doing such appreciable effort to propagate the traditional knowledge globally. The effort of AYUSH is truly worthwhile by developed NAMASTE-Portal<sup>4</sup> -Comprehensive web-portal for Standardized Terminologies and National Morbidity Codes of Ayurveda, Siddha and Unani Systems of Medicine and WHO-ICD-10 and ICD-11. It's a great achievement and a wonderful step toward the propagation of traditional medical knowledge globally. Recently an international conference held at New Delhi on 24-25 Feb-2020 by effort of Honourable Secretary — AYUSH, Vaidya Rajesh Kotecha with WHO team and experts from other countries on standardization of diagnosis and terminologies of Ayurveda, Unani, Siddha system of medicine drawn its inspiration from the newly introduced TM chapter of ICD 11<sup>5</sup>. The aforesaid standardization efforts are forward-looking step to position AYUSH to take up the health challenges of the 21st century.

There was meeting conducted under the leadership of AYUSH at well known Ayurveda institutes i.e National Institute of Ayurveda Jaipur, IPGT and RA Jamnagar with renowned Ayurveda experts as well as foreign health policy stakeholders World Health Organization (WHO) collaboration regarding the propagation of the Ayurveda knowledge and improvement in strategies to globalise the knowledge.

#### **Applied researches on preservation and protection of health**

With the help of Information technology one can propagate the knowledge of traditional medicine all over the world. Various innovative techniques and ideas related to information technology are in practice by some stalwarts of Ayurveda and they continually disseminate it, but most of the fraternity are still unaware of the same. The area of Ayurveda like academic, clinical and research fields where we can use IT, so that system get benefitted. Hence for evidence base documentation, data safety, security, easy accessibility, worldwide propagation and much more such are possible only by the meticulous use of IT. In our classics, it's also mentioned that learning other science (like Information technology) can enrich our traditional system of medicine<sup>6</sup>.

In the current scenario of health sector services the transparency, exploitation-free environment, evidence-based easily accessible data and no medical negligence is pre-requisite. In the AYUSH sector, most of the above problems have still existed. A lot of data (big data) generated daily in the AYUSH sector and available in irregular and scattered ways which are useless until it converted into a piece of fruitful information. The exploration of this data of traditional medicine is possible with the help of by using technology.

In year of 2019-20 Ministry of AYUSH had taken important step toward dispersal and improvement of the Ayurveda knowledge with the help of information technologies, for that pan India

Information Technology (IT) educational program for AYUSH (Ayurveda, Yoga, Unani, Siddha & Homeopathy) professional at Centre for development of Advanced Computing (C-DAC) innovation park, Pune to enhance the IT skills of AYUSH professionals to develop a quantity of tools, softwares and applications to assist the knowledge of Ayurveda with the help of Information technology<sup>7</sup>. The Ministry of AYUSH has taken initiative to get onboard in healthcare Information technology implementation projects. In this regard, the Ministry of AYUSH has created AYUSH GRID<sup>8</sup> to get all the IT projects under one umbrella exclusively meant for the improvement and facilitation of AYUSH pan India. This type of service initiative taken by Ministry of AYUSH Government of India to provide Electronic Health Record and Personal Health Records facility for the recipients of the citizen through Research Councils, National Institutes and other related platforms under Ministry of AYUSH, Government of India.

A-HMIS is a wide-ranging IT stand to manage all type of health care delivery systems and patient care in AYUSH hospitals. It is an upscale and customized version of THERAN (THE Research Application Nexus) - Hospital Management Information System developed by Siddha Central Research Institute, Chennai under the CCRS, Ministry of AYUSH to give a complete solution of HMIS amongst various HMIS present in AYUSH Institutions of Govt. Of India<sup>9</sup>. A document (STG) prepared by the Ministry of AYUSH, Government of India Under the guidance of Vaidya Manoj Nesari Adviser (Adviser) Ministry of AYUSH, assigned to "Institute of Post Graduate Teaching and Research in Ayurveda", (IPGT&RA) Jamnagar and "National Institute of Ayurveda", (NIA) Jaipur. Developing the Ayurvedic Standard Treatment Guidelines is a big task for the choice of medicines at a different level for uniformity also given the scientific and are based on Ayurvedic principles. The task was primarily assigned to "Institute of Post Graduate Teaching and Research in Ayurveda", (IPGT&RA) Jamnagar and "National Institute of Ayurveda", (NIA) Jaipur<sup>10</sup>.

To promote the medicinal plants' sector, the Government of India set up the National Medicinal Plants Board (NMPB)<sup>11</sup> is functioning under the Ministry of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha & Homoeopathy) Government of India aim to develop policies for the conservation, cultivation, trade and export of Traditional medicinal plants to all over the India and handle the issues related to quality of drugs. Also NMPB works as mediator between ministries/ departments/ organizations for the improvement of medicinal plants segment both at the Central /State level.

The Ministry of AYUSH features a Drug Control Cell (DCC) to administer regulatory and internal control provisions for Ayurveda, Siddha, Unani & Homoeopathy (ASU&H) drugs interacts with Central Drug Standard Control Organization (CDSCO), Directorate General Foreign Trade (DGFT), Ministry of Environment, Forests & global climate change (MoEF&CC) and other regulatory agencies for WHO-GMP/ CoPP certification scheme, export/import and clinical trials related matters, availability problems with raw materials and quality certification in respect of ASU&H Drugs, and industry-

related issues. These are appreciable efforts by the Department of AYUSH for developed E- Aushadhi portal to tackle the matter related regulation and quality control of Ayurveda, Siddha, Unani & Homoeopathy (ASU&H) drugs<sup>12</sup>.

### Model healthcare system and its propagation

If Ayurveda has to take the heights on a current scientific platform it has to focus on the generation of data regarding traditional medicine uses, propagation with perfect diagnosis and management. To propagate this ancient science on the global level first have to focus some necessitate related to Ayurveda i.e an intellectual property right, statistical data generation, awareness about science, bio-piracy, bioinformatics, etc. Ayurveda concepts, research related Ayurveda, clinical trials on traditional medicine must have to publish in the reputed indexed journal for all over acceptance.

Modern medical science developed extraordinarily and has also been accepted in the society as well as the scientific community. Then why does Ayurveda not get that much importance in its own birthplace — India? Why is that this ancient wisdom lagging behind, despite having tremendous potential to treat diseases successfully? Has this science remained at a superficial level? Unfortunately, the answer may be 'yes'. Many times it is stated that Ayurveda is 50 years behind modern science. However, only we are responsible for this lack of progress. In the era of nanotechnology, only a few Ayurvedic institutions with Ayurvedic teachers have an interest within the use of technology, modern innovations, and their integration in support of Ayurveda. Whatever policies of traditional knowledge available it should be practice oriented so that the knowledge of Ayurveda can be applicable present-scenario. At the primary healthcare services students of the undergraduate should be skilled of practicing Ayurveda. The scholar of post graduate should give their effort to establish up a secondary health care referral. Moreover, the super-specialty Ayurvedic hospitals should have all the infrastructure for tertiary and quaternary healthcare. Institutes. This will satisfy the needs of the good academic and clinical practice of Ayurveda<sup>13</sup>.

When we focus on the today's scenario it is found that, per year 2000 around Ayurveda graduates completed the course and enter into the streamline of academics and practice; few of Ayurvedacharya want to go ahead with research oriented profession in Ayurveda. It is needed to investigate that reason for this happening. Very few organizations have well-established research infrastructure for exclusive research in Ayurveda. Owing to this, most of the Ayurvedic researches are yet at the primary postgraduate level and the least that can be expected is to upgrade the researches.

Still, the research aspect of Ayurveda lags behind. Although the national institutes of Ayurveda, with support from the central government, like National Institute of Ayurveda, Jaipur, Institute for Postgraduate Teaching and Research in Ayurveda, Jamnagar, and so on, train the scholars about research, they do not have a specialized research wing for conducting continuous research. The research conducted at the postgraduate level is time-bound for 3 years, where the students are literally actively involved

just for two years. Despite the very fact that a number of the researches give excellent clues about the Ayurvedic potency, only a few are continued further and practiced as experience-based medicines, with good scientific data. Furthermore, only a few get published during a standard journal after a referee, subject to the sufficient number of patients under the study. Moreover, at the global level, Ayurveda is viewed by the aspect of 'lack of supportive scientific data'. If this has got to be stopped, the entire system needs rejuvenation altogether aspects.

The clinics and hospitals need accreditations and gradations to take care of their standard. The existing higher-level postgraduate institutions should think with a broader vision, to get scientific data, supported the essential principles of Ayurveda. The subspecialties and super specialties in Ayurveda need to be imbibed in the Ayurvedic academia. Fortunately, some efforts are made by some interdisciplinary people curious about Ayurveda, to develop standard Ayurvedic research organizations. The Ayurvedic personnel aren't during a leading position within these organizations and remain in the sidelines. This is good for the event of herbal medicine, but not for holistic medicine. The faculties who have the good setup to conduct a trial with necessity support they should to conduct the project which can help field research to propagate the traditional medicine. The parent body, the Department of AYUSH; the controlling Ayurvedic research council CCRAS, the tutorial Council, Central Council of Indian Medicine (CCIM), the national institutes IPGT and RA, National Institute of Ayurveda (NIA), Faculty of Ayurveda, IMS, Banaras Hindu University (BHU), and those in Kerala and southern states should join their hand together and play their role-specific to the up-gradation of Ayurveda in the academic, clinical, and research fields. Research journals have an excellent role in coordinating an equivalent within the appropriate direction. AYU could also be a platform for these activities. This will work for Indian medicine in India initially also as globalize it in its original form. Now can be hoped that the new, working All India Institute of Ayurveda, within the capital, are going to be a singular institute, will be a unique institute, fulfilling the aspirations of the people with the synthesis of quality Ayurvedic education, enriched by allied sciences, full-fledged infrastructure for interdisciplinary and multidisciplinary research, extending good clinical service to the ailing society, and by providing standard quality Ayurvedic drugs, by integration of tradition and technology and laboratory research and field research.

At the academic level in Ayurveda institutes can take some important steps to propagate traditional knowledge and transform it generation to generation should have to enhance the methodology of teaching by using Microsoft powerpoint presentation, Microsoft word, Microsoft excel, video conferencing, the arrangement of webinar, etc. This platform can be used to disseminate the expert's knowledge, skills & opinion in remote areas. For the preservation and protect the Ayurveda knowledge can take help technologies i.e E-library such as LIBSYS, e-Granthalaya<sup>14,15</sup>, etc are suitable. With the help of such applications and tools i.e Mendeley<sup>16</sup>, SPSS<sup>17</sup> (Statistical package for social science), science direct, Pub



Med, Cochrane, Google, etc. collect the useful information, newly emerging researches regarding health and at that level where traditional medicine take stands. We can focus on those points and elaborate it universe level.

#### **Prevention from occurrence and recurrence of diseases:**

Almost 6,00,000 villages are there in India and in terms of health facilities, there are subcenters, primary health centers, and community health centers that are there but due to inadequate staff, insufficient medicines and other tools we failed to avail our rural population suitable health facilities. As Ayurveda is the science of life, prevention of disease is more advocated in this science, so promotion of Ayurvedic concepts will help them in the management of the disease or spread of disease. In India, now its non-communicable disease like hypertension, obesity, diabetes and its associated diseases contributes majorly in-hospital visit. And if society follows Ayurveda thoroughly, these conditions can be avoided. As India struggles under the burden of diabetes and rising non-communicable diseases, the integration of cost-effective traditional systems, complementary and alternative medicine with the conventional medical systems, under Indian Ministry of AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) is inevitable, as it seeks to promote holistic health<sup>18</sup>. Even though India is open to complementary and alternative medicine (CAM) practice, it was noted in a study done by Roy et al. (2015) that only 28% of the patient population practice CAM<sup>19</sup>.

A cross-sectional study based on data collected from the National Health Interview Survey at the Centre for Disease Control and Prevention in the United States has highlighted the prevalence of such approaches. Result of this study, yoga was accepted among the seven frequently used complementary health approaches (CHA)<sup>20</sup>.

For the International Day of Yoga, the Ministry of AYUSH, India prepared a Standard Yoga Protocol for the promotion of positive health included light exercises followed by sitting, standing, and supine postures combination with breathing exercises and meditation<sup>21</sup>. Evidence suggests that yoga plays a pivotal role in changing the physiology of the body. Some of the yoga practices used in these studies included (a) abdominal stretching *Asanas* (postures) that may help in the rejuvenation and regeneration of pancreatic cells beneficial to diabetes patients<sup>22</sup>, (b) *Pranayama* (breathing exercises), and (c) meditation that regulates the hypothalamic-pituitary-adrenal axis, resulting in decreased cortisol levels, heart rate, and heart rate variability<sup>23</sup>. The prevalence of Yoga in India is 11.8%, and 91.5% of participants believe that yoga yields health benefits such as the control of T2DM<sup>24</sup>.

A cross-cultural comparative analysis was carried out to examine the health-seeking behavior of university students from New Delhi (India), Newcastle upon Tyne (United Kingdom) and Atlanta (United States). The Indian students opted for CAM over allopathic medicine, and nutrition-based approaches [supplements, etc.] were found to be most prevalent among the students. Considering the unique health care systems of the three countries, it was concluded that 55% of Indian

students considered CAM as a more affordable approach than routine healthcare practices<sup>25</sup>. A study conducted by Kong et al. (2013) among the medical practitioners, it was observed that 71% of medical practitioners feel that CAMs are effective with allopathic treatment<sup>26</sup>. According to Roy et al. (2015) even though 58% of the doctors use CAMs for themselves, only 37% recommend their patients and enquire about the utilization of them. This highlights the importance of creating awareness among the medical practitioners<sup>27</sup>.

Proper replacement of food, water, place, and air than eating herbs, fasting, chastity, cleanliness, soil, sunlight, color, exercise, affection, sweat, vomiting, habitation, bliss, peace, goodwill and so on are adopted in routine lifestyle. Consumption of substances, as well as abstinence from abusive diet, should be considered as simple, natural and beneficial as these things, and every patient should consume the same natural remedies. Doctors should consider such things as a real cure and study them thoroughly and in this innovative way of giving patients the benefit of such treatments, they may even begin to take care of some deficiencies in the beginning. By doing so, the outcome will gradually turn in their favor and ultimately the gains will not be without its being overpowered. Patients should also consider the importance of these natural remedies and seek the advice and protection of their experienced therapists. These treatments are so simple and natural that those who keep an eye on the books that follow them and even maintain proper normalcy following them, often lose half of the chances of developing the disorder; As well as the emergence of such diseases, they are easily avoided with such simple intake.

#### **Future strategies for preservation of Ayurveda health:**

India is a very diverse in population-based on races, socioeconomic status, literacy rate. So, there should be a uniform educational and training program introduced on the national level. Ayurveda education starts with undergraduates. And students from science background are eligible to appear in those entrance tests. They are not sensitized in ayurvedic concepts. So, Ayurveda should be included in the school curriculum in innovative ways, also undergraduate curriculum should be made attractive and must have recent advances of Ayurveda and established integration with contemporary sciences. Faculty development programs should be introduced, so, that faculty have enough exposure to the advancements, and researches. The student should have questioning habits, so, they can assess their concepts. This will help in more meaningful basic research in Ayurveda. Ayurveda is personalized science here 'one size suits for all' concept does not fit. So, clinical trials should be framed accordingly. Successful and established clinicians/academicians must-visit Ayurveda colleges to give insight about our science and its validity in the contemporary world, this will help newly admitted graduates more faith in their pathy and make them think about the next step, they can have Multidisciplinary centers should be formed, this will help in a good research work. Institutes should have devoted faculty for bio statics, scientific writing, and research ethics. There should be strict surveillance of ADR (adverse drug reactions). Over the counter drug, sell should be restricted. A well-controlled long-term cohort study should be advocated for the re-establishment

of the facts. Predator journalism should have a check. A double-blind randomized and controlled trial should be encouraged. This will promote more meta-analysis and systemic reviews. The Ayurveda fraternity developed databases such as *Triskanda Kosha*, *Trisutra*, NAMASTE Portal<sup>28</sup>, AYUSH PORTAL<sup>29</sup>, etc. that are totally accepted. Also, some projects like Standard treatment guideline (STG), standard treatment protocol (STP), Ayurgenomic<sup>30</sup>, *Prakruti Praikshana*<sup>31</sup>, etc. carried out. These are supportive to develop uniformity in Ayurveda science. The unfamiliarity with technologies i.e educational softwares, searching softwares, health applications, etc., less knowledge, lesser technical experts and fragile dedication mark its limitation. The challenges in the traditional system of medicine can be resolved by evolving knowledge with the help of training, symposium, conferences, etc. Also, to develop soft skills, learning ability, clinical expertise, enthusiasm among teachers, students and assisting staff. Making awareness about the importance and usage of Traditional medicine with respect of our limitations can give better service to people. Also it is mandatory for the Ayurveda research institutes have their own GMP certified Pharmacy set up, Animal house for testing drug toxicity and well developed herble garden with highly standards. If these necessity fulfilled by institutes only thne after allow to conduct researc trial in particular research institutes.

#### Scope of Ayurvedic in preservation of health and possibility of future of Ayurveda Science

Today's era of urbanizations people have more stress, with the increase in environmental pollution, professional work load, proliferating stress, unhealthy lifestyle choices and general dietary indiscipline resulting into diseases like hypertension, diabetes, obesity and cardiovascular diseases which causing sustained imbalance in metabolic modalities. Panchakarma procedures described in Ayurveda classics i.e Abhyanga, Swedana, Vamana(therapeutic emesis), Virechana(therapeutic purgation), Basti, Nasya, Shirodhara, Gandusha, Anjana, Udvartana etc. are very effective to prevent the body from the chronic disorders and nealy emerging life style related disorders. People should periodically take advantage of the remedies of panchakarma shown in Ayurved. Government also should take steps to raise awareness for it.

Suvarna Prashan mentioned in Ayurveda classics (Kashyap Samhita) is the best to boost the immunity and intelligence of children. It is a rejuvenate tonic for children, acts on the mind, immune system, improve digestive fire, enhance physical power. After the birth of child the doctor always advise and recommends us for vaccination to prevent the new born from diseases. Basic idea of vaccine is described in Traditional Science – Ayurveda but it is less popularized due to people unaware about it. The government should make it mandatory in each dispensorrirs work as primary, secondary and tertiary level, so that the immunity of children can be enhance and less affected by diseases where the health facalities is difficult. Suvarna Prashana described in Ayurveda thousand years ago can replace in future the vaccine (improving immunity) programme of Modern medicine from prevention of several diseases and help to society for healthy life and longativity without any side effect.

Due to the urban life style today's era couples are more prone to difficulty in concive. If The remedies as well as procedures mentioned in Ayurveda done in both male and female partner before the family planning, it can give better result and also achieved helps to achieve healthy child. People should aware about as soon as they go to the gynaecologist immediate after the conciveing for the check up and medication, they should come to Ayurveda dispensaries first before having family planning and take the panchkarma procedures that mentioned in classics for both male and female. It can helps society to increase in number of norml and healthy labour as well as decrease the fatal and maternal death rate.

In Ayurveda classics the dietary plan for the pregnant women descriptively mentioned because food is the best source of nourishment as well as medication for the pregnant woman. This uniqueness of Ayurveda known as Garbhini Paricharya (Detailed and comprehensive diet plan) accordingly the growth of the fetus in the womb and at the same time ensures health of the being practiced by the vaidyas of ancient medical tradition. It helps to nourish fetus as well as mother and the procedures mentioned in the 8<sup>th</sup> and 9<sup>th</sup> month of Garbhini Parichrya increases the chance of healthy and normal labour. Government should included it in the pregnancy diet chart with Mamta Card facility. It helps to government health department to achieve the Millennium Development Goals under the RMCH+A programme by improve the total fertility rate, reduce in infant mortality rate and maternal mortality rate which is the vital health indicators.

#### CONCLUSION

The future of Ayurveda lies in its ability to adapt while preserving its core principles. By combining ancient wisdom with modern scientific advancements, Ayurveda can not only play a pivotal role in addressing contemporary health challenges but also contribute to the broader goal of global wellness and sustainability.

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